Mitsubishi Electric Corporation Nagoya Works is a factory certified for ISO14001 (standards for environmental management systems) and ISO9001(standards for quality assurance managememt systems)

⚠ Safety Warning

To ensure proper use of the products listed in this catalog, please be sure to read the instruction manual prior to use.

MITSUBISHI ELECTRIC CORPORATION
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MITSUBISHI ELECTRIC

MITSUBISHI CNC

Changes for the Better

The Best Partner for Your Success

The Best Partner for Your Success

It is the MITSUBISHI CNC business philosophy.
All the staffs who are committed to MITSUBISHI CNC business wish to be
"the best partner for customers aiming at global and future-oriented development".
We will continue our efforts with the aim that our CNCs
be great help to the customers.

Technologies
for the Next Generation

Advanced Technologies for the Next Generation

Our sophisticated technologies developed as a total factory automation manufacturer enable advanced machining controls, and support manufacturing seeking the best accuracy and productivity.
Mitsubishi CNC changes machine tools, machining and manufacturing.

Solutions
for the Future

Optimum Solutions for the Future

As a global CNC provider and best partner, we provide optimum technologies and supports for the users stepping toward the future.
Mitsubishi CNC creates new values with the users.

Support
for the Day-to-day Comfort

Solid Support for Day-to-day Comfort

Prompt responses, solid technologies and user-friendly support.
We continuously improve our after-sales services for our world-wide users.
For your "Mitsubishi CNC again!".

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M70 Series	P.13-14		

] Contents of this catalog includes optional specifications. Refer to specification manuals for details.

Technologies
Solutions
Support

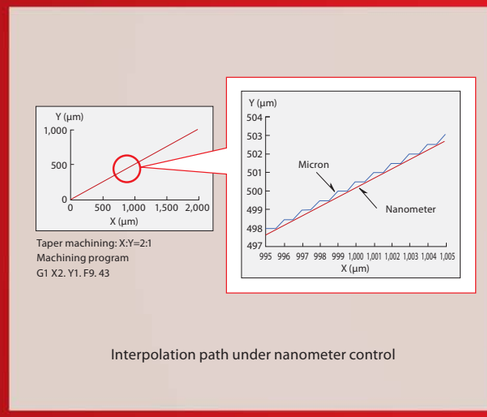
Technologies
for the Next Generation

Our sophisticated technologies cultivated as a total factory automation manufacturer enable advanced machining controls, and support manufacturing seeking the best accuracy and productivity. Mitsubishi CNC changes machine tools, machining and manufacturing.

High-accuracy Machining with Complete Nano Control

Complete NANO Control

The advanced machining control technology supports ultra-accurate machining for the next generation. The complete nano control enables all processing in nano-units, from NC operation to servo processing. The highest machining can be achieved.



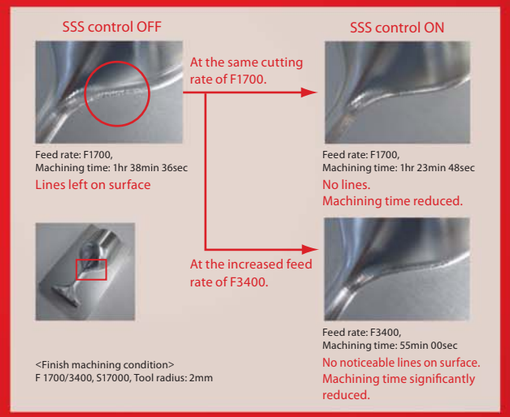
Taper machining: X:Y=2:1
Machining program
G1 X2. Y1. F9. 43

Interpolation path under nanometer control

High-quality Machining with Balanced Accuracy and Speed

SSS Control

SSS control ensures high machining stability and quality with virtually no effects resulting from cutting shape or speed. Smooth surface can be achieved even when small step exists in a path, and machining time can be reduced by 5 to 30% relative to conventional system.

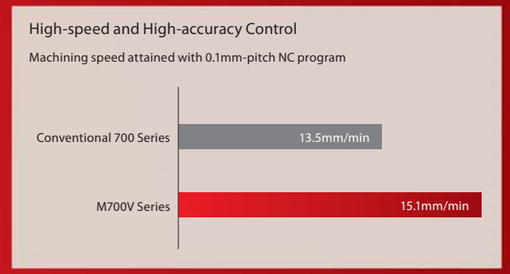

SSS control OFF
SSS control ON
At the same cutting rate of F1700.
Feed rate: F1700,
Machining time: 1hr 38min 36sec
Lines left on surface
Feed rate: F1700,
Machining time: 1hr 23min 48sec
No lines.
Machining time reduced.
At the increased feed rate of F3400.
Feed rate: F3400,
Machining time: 55min 00sec
No noticeable lines on surface.
Machining time significantly reduced.

<Finish machining condition>
F 1700/3400, S17000, Tool radius: 2mm

Die/Mold Machining Time Reduced

High Speed Control

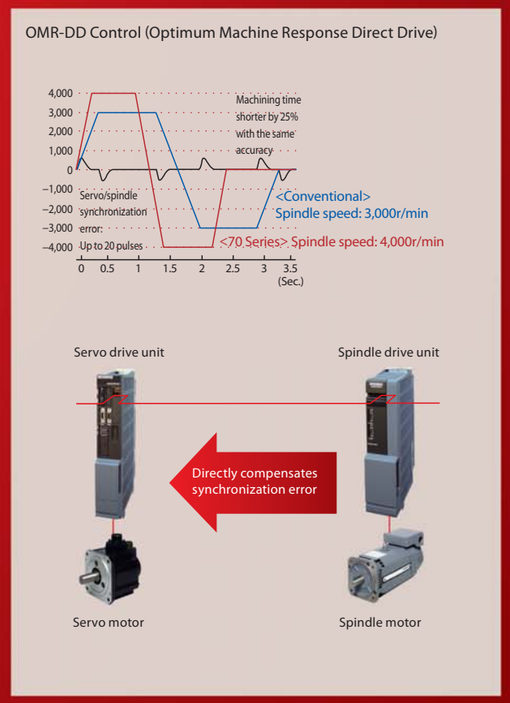
Complete nano control enables high-speed and high-accuracy machining at a maximum fine-segment feed rate of 151,000BPM. (BPM: Block per Minute)



High-speed and High-accuracy Tapping

OMR DD Control

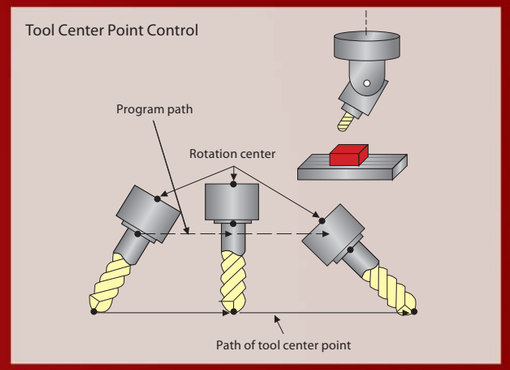
Servo axis directly detects and compensates spindle's delay on the network. This control enables quicker and more accurate tapping machining than the previous.



High-grade 5-Axis Machining Control Technology

5 Axis Machining Control

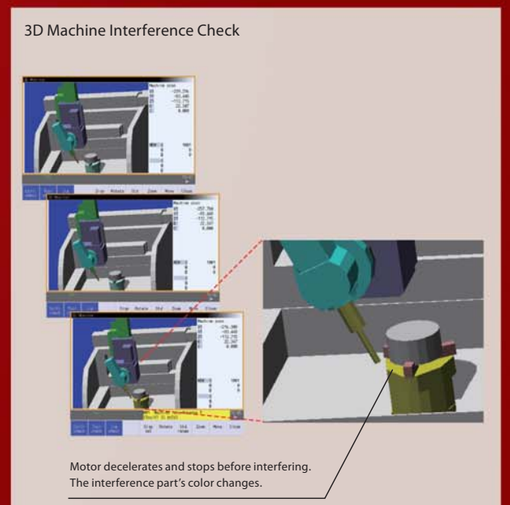
Control will be performed at the speed of the table coordinate system so that the tool center point trace a straight line. This function contributes to high-accuracy machining on the surface.



Prevent Interferences in Machine Beforehand

5 Axis Machining Control

A machine is modeled with this function. When the possibility of interference is detected, the parts to interfere will be shown in a different color, and the motor will be decelerated to stop before interfering.



Technologies
Solutions
Support

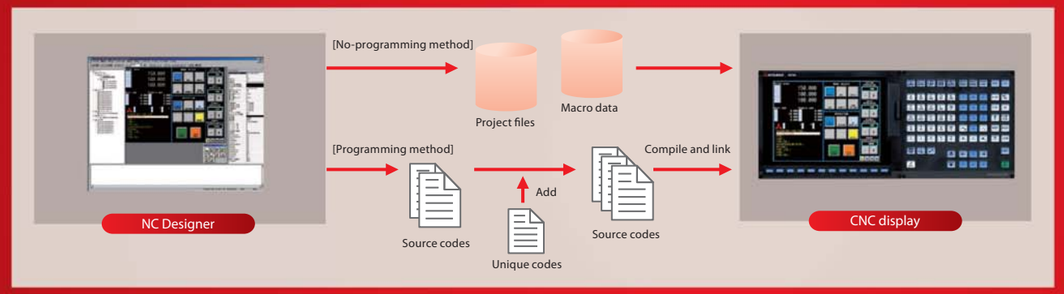
Solutions
for the Future

As a global CNC provider and best partner, we provide optimum technologies and supports for the users stepping toward the future. Mitsubishi CNC creates new values with the users.

Original Screen Design Environment

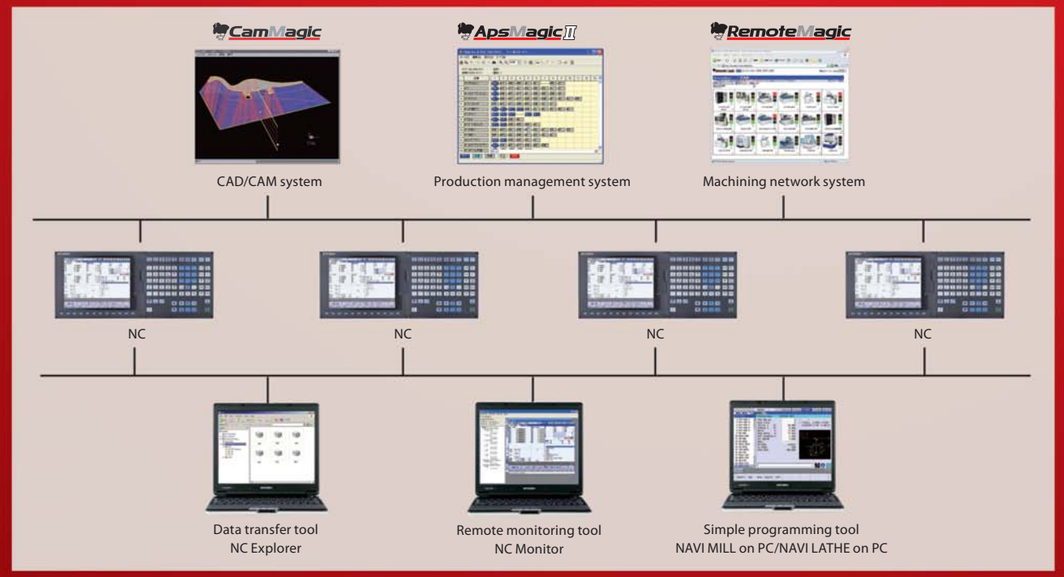
Custom CNC Solution

- Well-developed screen design tools support CNC's individualization.
- NC Designer, which helps creating original screens easily, enables users to equip unique custom screens that meet machine tool characteristics.
- No-programming method that enables automatic programming by laying out switches, buttons and data display frames, etc. and programming method that enables higher-level processing are available.



Manufacturing Support Software

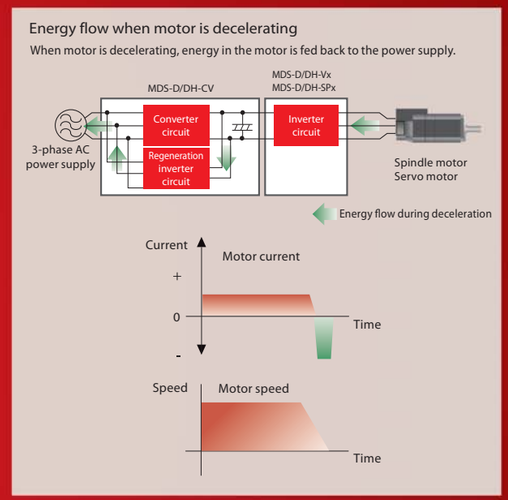
By the combination of various software, optimal solutions can be provided to shop floor.



Saving Energy

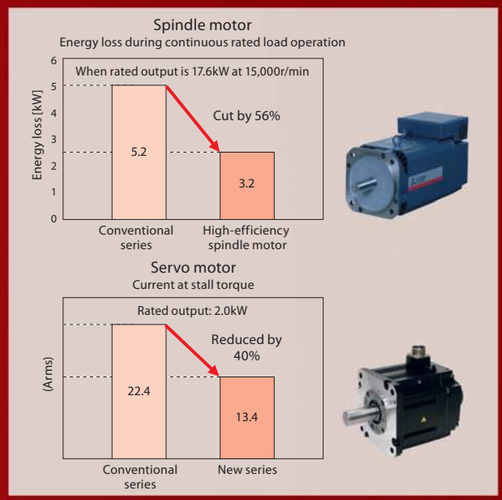
Drive units

Power regeneration system that allows an energy generated during deceleration to be used as power supply is used. Use of lower energy loss device has enabled reducing loss of power.



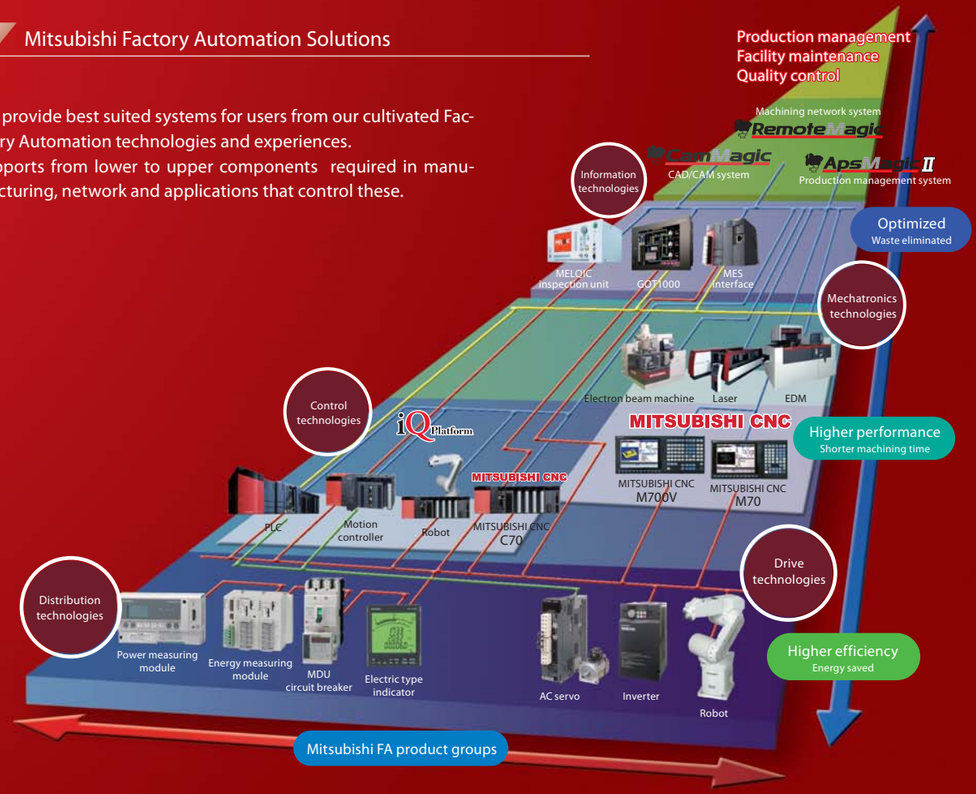
Spindle motors/Servo motors

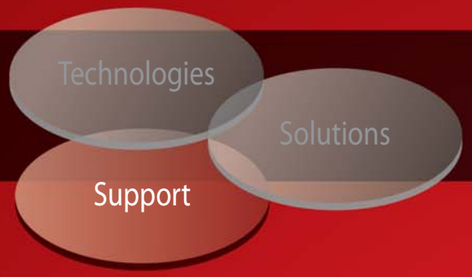
Energy loss of spindle motors during high-speed operation has been substantially reduced. Drive current of servo motors has been reduced by making the servo motors smaller with higher torque.



Mitsubishi Factory Automation Solutions

- We provide best suited systems for users from our cultivated Factory Automation technologies and experiences.
- Supports from lower to upper components required in manufacturing, network and applications that control these.





Support

for the Day-to-day Comfort

Prompt responses, solid technologies and user-friendly support.
We continuously improve our after-sales services for
our world-wide users.
For your "Mitsubishi CNC again!".

Global Service & Support Network

We provide satisfying after-sales service globally to be your best partner.

Nagoya Works

Korean FA Center

Shanghai FA Center

Taiwan FA Center

Thailand FA Center

ASEAN FA Center

European FA Center

North American FA Center

FA Communication Center

East Japan Mechatronics Solution Center

West Japan Mechatronics Solution Center

FA Centers have been established to control service centers and service satellite in each area to enhance services such as providing training for engineers and enhancing service parts and repair facilities.

After-sales Service

Maintenance service

Service centers with high-quality customer services are located in various regions around the world to provide secured and reliable services to the users. We offer wide range of services such as giving prompt and precise advices and suggestions, and on-site-repairs, etc.

Providing parts

Should there be any failure, maintenance parts stored in every service center can minimize down time. We are trying our best to provide services so that you can use your valuable CNC machine tools securely.

1-year maintenance contract

We provide 1-year maintenance service after completion of warranty period. Should there be any failure, our engineers in the closest service center will be at your support as quick as possible.

Training

We provide training for both basic and advanced operations using actual machines. Individually tailored training program and on-site lessons are also available.

Displays in 17 Languages

Supports 17 languages.

Supported languages

- Japanese
- English
- German
- Italian
- French
- Spanish
- Chinese (simplified)
- Chinese (traditional)
- Korean
- Portuguese
- Hungarian
- Dutch
- Swedish
- Turkish
- Polish
- Russian
- Czech

High-quality

Our priority is to provide the users with high-performance and high-quality products. We are trying our best to improve quality and reliability in every process from planning to development, designing, manufacturing and operation after delivery.

Nagoya Works

FA Development Center

Lineup

Advanced product lines lead your machine to the next level.

High-grade Mitsubishi CNC, M700V Series, Equipped with Advanced Complete Nano Control.

- The latest RISC-CPU is equipped to achieve advanced complete nano control.
- High-accuracy machining with complete nano control.
- Comfortable operability that significantly reduces machining setup time.

M700VW Series
(equipped with Windows® XPe)

M700VS Series

] Windows® is the trademark or registered trademark of Microsoft corporation in the United States and other countries.

Global Standard Mitsubishi CNC, M70 Series, Pursuing High Speed and Accuracy

- Enhanced machining accuracy and reduced tact time.
- Comfortable and advanced operation contributing to setup time reduction.
- Compact size achieved.

Incorporated Mitsubishi's State-of-the-Art Technologies. iQ Platform Compatible CNC C70 Series

- Compatible with Mitsubishi FA integrated solution, "iQ Platform".
- High-performance CNC and high-speed PLC are integrated. High-speed control reduces cycle time.
- Wide variety of FA unit group supports structuring flexible lines.

] Customized screen image

Drive Units

Multi-hybrid Drive MDS-DM Series

- The high-performance multi-hybrid drive units control multiple servo motors and spindle motor, supporting downsizing of machines and offering technical advantages.
- Connection between the drive unit and CNC is fast and reliable optical communication. Power regeneration system that efficiently uses energy at deceleration as power supply contributes to highly-frequent acceleration/deceleration and energy-saving.

Servo/Spindle Drive MDS-D-SVJ3/SPJ3 Series

- Ultra-compact drive units with built-in power supply contribute to reducing control panel size.
- High-speed optical communication enables shorter position interpolation cycle and direct communication between drives, promoting further high-speed and high-accuracy machining.
- A high-efficiency fin and low-loss power module have enabled unit downsizing, which also leads to a reduction in control panel size.

High-performance Servo/Spindle Drive MDS-D/DH Series

- With the fastest current control cycle, basic performance has drastically enhanced (high-gain control). Combination of high-speed servo motor and high-accuracy detector helps enhance overall drive performance.
- High-speed optical communication enables shorter position interpolation cycle and direct communication between drives, promoting further high-speed and high-accuracy machining. A high-efficiency fin and low-loss power module have enabled
- unit downsizing, which also leads to a reduction in control panel size.

Servo Motors

HF Series

- Medium-inertia, high-accuracy and high-speed motors
- High-inertia machine accuracy is ensured. Suitable for machines requiring quick acceleration.
- Range: 0.5 to 9kW
- Maximum speed: 4,000r/min or 5,000r/min
- Supports three types of detectors with the resolution of 260,000, 1 million or 16 million p/rev.

HF-KP Series

- Small-capacity and low-inertia motors
- Suitable for auxiliary axis that requires high-speed positioning.
- Range: 0.2 to 0.75kW
- Maximum speed: 6,000r/min
- Supports a detector with the resolution of 260,000p/rev.

Linear Servo Motors LM-F Series

- An optimized magnetic circuit and improved motors material have realized larger maximum output, lower heat generation and lower cogging, which contribute to machine tools with higher speed and accuracy. Motor size has been reduced, thereby contributing to the realization of more compact machine tools.
- SUS cover, attached as standard, prevents permeation of dust and oil.
- Dimensions:
  Length: 290 to 1,010mm
  Width: 120 to 240mm

Direct Drive Servo Motor TM-RB Series

- High-torque DD motor in combination with high-gain control system provides quick acceleration and positioning, which makes rotation smoother.
- Suitable for rotary axis that drives a table or spindle head.
- Compared with a conventional rotary axis with a deceleration gear, this DD motor has higher accuracy and is maintenance-free having no friction or backlash.
- Range: Maximum torque: 700 to 3,000N·m

Spindle Motors

High-performance New Type Spindle Motor SJ-D Series

- Motor's energy loss has been significantly reduced by optimizing magnetic circuit.
- High-speed specification bearing is equipped as standard, achieving higher-speed, lower-vibration and improved durability.
- Range: 3.7 to 11kW

Built-in Spindle Motors

- Electricity loss has been minimized by providing better efficiency during high-speed rotation.
- Stator coil-end size has been reduced, realizing a shorter overall motor length.

High-performance Spindle Motors SJ-V Series

- A vast range of spindle motors is available, including standard, high-speed and wide-range output units, all ready to support diversified machine tool needs.
- Range:

Standard:	SJ-V Series	0.75 to 55kW
Wide-range constant output:		
	SJ-V Series	5.5 to 18.5kW
High-speed:	SJ-V-Z Series	2.2 to 22kW
Hollow-shaft:	SJ-VS Series	5.5 to 18.5kW

M700V Series

High-grade Mitsubishi CNC, M700V Series, equipped with advanced complete nano control.

Latest RISC-CPU for Achieving Advanced Complete Nano Control

- The latest RISC-CPU and high-speed optical servo network are equipped, achieving high-speed and high-accuracy control, nano control and 5-axis machining.
- Functions can be easily expanded by adding an expansion unit.
- Ultra-high-speed PLC engine reduces cycle time.

High-accuracy Machining with Complete Nano Control

- Combination of "complete nano control" that processes everything from NC operation to servo control processing in nano-units, a State-of-the-Art technology "SSS control" and "OMR control" makes it possible to achieve ultra-high-quality machining.
- High-speed and high-accuracy machining at 151,000 blocks per minute can be achieved.

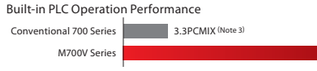
Numerical processing performance and PLC processing performance of M700V Series has been significantly improved than those of conventional 700 Series.

Machining Program Processing Speed

(Note 1) BPM is a number of machining program blocks processed per minute.
(Note 2) M720VS's fine segment processing capability is at 67,400,000BPM.

User Macro Processing Performance

Built-in PLC Operation Performance



(Note 3) PCMIX is the average number of instructions (in which various sequence instructions are combined at a certain rate) which can be executed in 1μs.

Comfortable Operability that Significantly Reduces Machining Setup Time

NC screen design has been renewed, and strongly supports operation from machining setup to monitoring. The NC screen displays machining program check and machining states visually by using 3D display.

Windows®XPe-based Model Added to the Product Line

Since Windows®XPe is installed in M720VW, M730VW and M750VW, they facilitate developing such as MTB's original CAM function and data managing function that can enhance the operability.

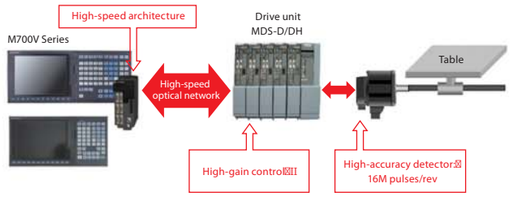
Main Specifications

Specifications \ Model name		Machining center system			Lathe system			Machining center system			Lathe system		
		M720VS	M730VS	M750VS	M720VS	M730VS	M750VS	M720VW	M730VW	M750VW	M720VW	M730VW	M750VW
Number of control axes	Maximum number of control axes (NC axes + spindles + PLC axes)	12	16		12	16		12	16		12	16	
	Maximum number of NC axes	6	16		12	16		6	16		12	16	
	Maximum number of spindles	4			4	6		4			4	6	
	Maximum number of PLC axes	6											
	Maximum number of PLC indexing axes	4	6		4	6		4	6		4	6	
	Maximum number of simultaneous contour control axes	4		8	4		8	4		8	4		8
	Maximum number of NC axes per part system	6	8		6	8		6	8		6	8	
Maximum number of part systems		1	2		2	4		1	2		2	4	
CF card in control unit mode		—						Available					
Front IC card mode		Available											
Hard disk mode		—						Available					
Least command increment		0.1μm	1nm		0.1μm	1nm		0.1μm	1nm		0.1μm	1nm	
Least control increment		10nm	1nm		10nm	1nm		10nm	1nm		10nm	1nm	
Maximum program capacity		230KB (600m)	2,000KB (5,120m)		230KB (600m)	2,000KB (5,120m)		230KB (600m)	2,000KB (5,120m)		230KB (600m)	2,000KB (5,120m)	
Maximum PLC program capacity		42,000 steps (128,000 steps: under planning)											
Display		8.4-type/10.4-type/10.4-type touch panel (selectable)						10.4-type/10.4-type touch panel/15-type/15-type touch panel (selectable)					
Keyboard		Sheet keys/clear keys (selectable)						Clear keys					
Windows® XPe		—						Available					

] Maximum specifications including optional specifications are listed.
] Windows® is the trademark or registered trademark of Microsoft corporation in the United States and other countries.

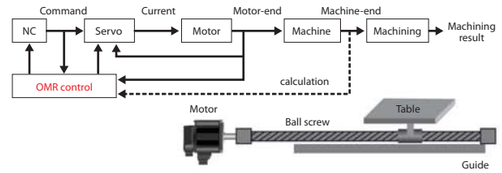
Complete Nano Control

All operations from program values to servo command are done in the nano-unit. Interpolation is at the nano-unit level even when program command is at the micrometer-unit level.



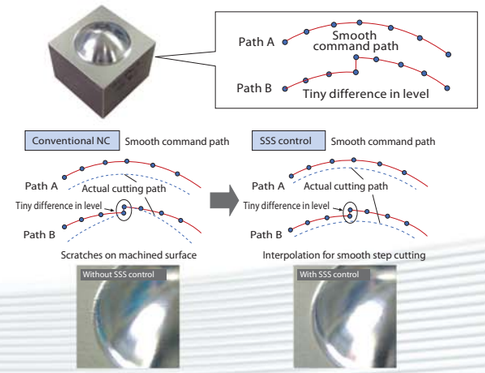
OMR Control Optimum Machine Response

Unlike conventional control, which simply matches the motor path to the commands, OMR control calculates the machine's status based on a model and applies correction to motor control in order to match machine tool position – not motor position – to the commands.



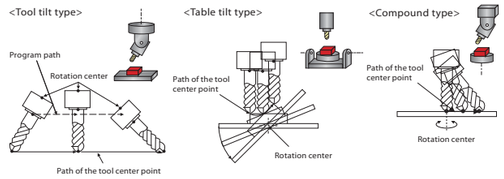
SSS Control Super Smooth Surface

By judging the shape in large from commanded paths, unnecessary deceleration is reduced even when fine steps exist; thereby, realizing smooth and deviation free die-mold machining.
Machining time can be shorter by 5 to 30% relative to a conventional system, effective especially at a higher feed rate.



Tool Center Point Control

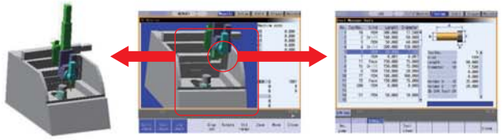
Control will be performed at the speed of the table coordinate system so that the tool center point traces a straight line. This function contributes to high-accuracy machining on the surface.



3D Machine Interference Check

*For M700VW series only

This function prevents interference in machine beforehand, by modeling the machine (in both manual and automatic operations).
Interfered part can be checked by moving, rotating or enlarging the models. Interference can be prevented for tilt-type tool axis and rotating table.

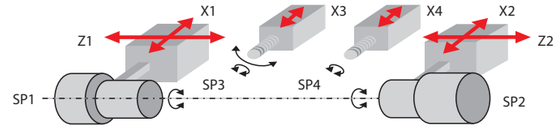


Model a machine. Check using machine and tool models. Create model data for each tool.

Multi-axis, Multi-part System Control

Flexibly supports various compound machining from multi-axis machining center and multi-part system multi-axis milling to hobbing.

Multi-part system multi-axis lathe



(NC axes + spindles + PLC axes 16)≦

M70 Series

Global standard for Mitsubishi CNC, pursuing high speed and accuracy

Enhanced Machining Accuracy and Reduced Tact Time

- The minimum command unit 0.1μm and minimum internal interpolation unit 0.01μm allow highly accurate and smooth machining.
- High-speed error compensation function is equipped for controlling spindles and servo, enabling high-speed and high-accuracy tapping.
- The high-speed PLC engine enhances the operation speed, contributing to cycle time reduction.

Comfortable and Advanced Operation Contributing to Setup Time Reduction

- Equipped with pop-up screens to liberate operators from screen hierarchy, and guidance function on operations, programs and alarms.
- Ethernet interface is equipped as standard; thus, program management can be easily realized.
- With a compact flash installed in front of the display, large amount of NC programs can be saved and maintenance data can be easily managed.
- Simple programming functions, NAVI MILL and NAVI LATHE are installed.

Compact Size Achieved

- Unit dimensions have been downsized by integrating a display and CNC control part, contributing to downsizing control panel.
- High visibility TFT color LCD is used. 8.4-type and 10.4-type size displays are available.

Main Specifications

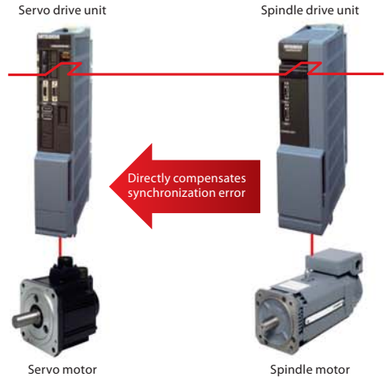
Specifications \ Model name		Machining center system		Lathe system	
		M70 TypeA	M70 TypeB	M70 TypeA	M70 TypeB
Number of control axes	Maximum number of control axes (NC axes + PLC axes + spindle)	11	9	11	9
	Maximum number of NC axes	8	4	9	4
	Maximum number of spindles	2	2	4	2
	Maximum number of PLC axes	6	6	6	6
	Maximum number of simultaneous contour control axes	4	4	4	4
Maximum number of part systems		1	1	2	1
Least setting/command increment		0.1μm			
Control increment		0.01μm			
Display		8.4-type/10.4-type/10.4-type touch panel (selectable)			
Maximum program capacity		230kB (600m)			
Maximum PLC program capacity		32,000 steps	20,000 steps	32,000 steps	20,000 steps
HIMI customization function		NC Designer			
Enhanced PLC engine		Available	—	Available	—

High-speed Synchronous Tapping Function <OMR-DD>

OMR DD Control

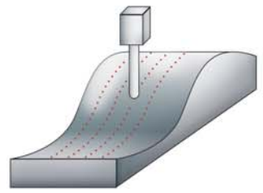
Optimum Machine Response Direct Drive

High-speed error compensation function is used for controlling the spindle and servo, enabling fast and accurate tapping. (Compatible model: M70 TypeA)



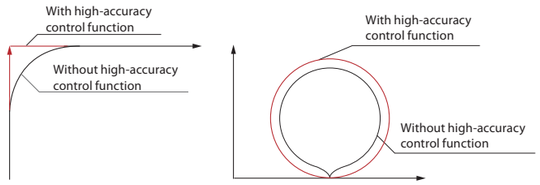
High-speed Machining Mode

By reading ahead some blocks in a program that contain successive fine travel distances, the program can be rapidly executed at up to 33,000 blocks/minute.
(Compatible model: M70 TypeA)



High-accuracy Control Function

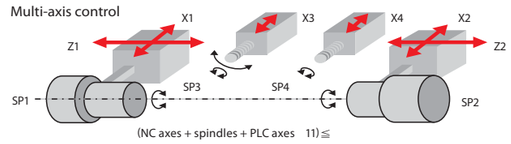
- At a corner that consists of straight lines, sharp interpolation control is performed to follow the commanded path by correcting curvature.
- Inward deviation error in arc motion is reduced to further accurately follow the command value.


With high-accuracy control function
Without high-accuracy control function
With high-accuracy control function
Without high-accuracy control function

<Curvature at a corner> <Error in arc motion>

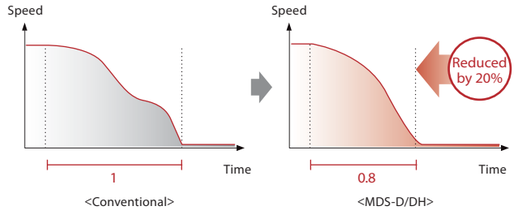
Multi-axis Control

Supports a wide variety of machines by offering control with up to 2 part-systems and 11 axes (up to 9 NC axes, 4 spindles and 6 PLC axes).



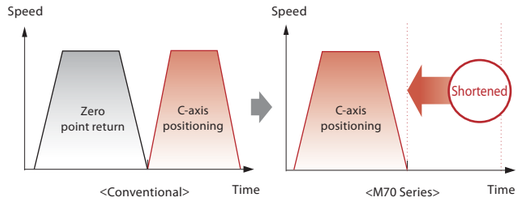
High-speed Spindle Orientation

The maximum torque deceleration is enabled without being influenced by load inertia, which always allows spindle orientation in the shortest time.



Spindle/C-axis Control

Spindle's constant position loop control has eliminated zero point return time at switching from spindle to C-axis.



User Friendly

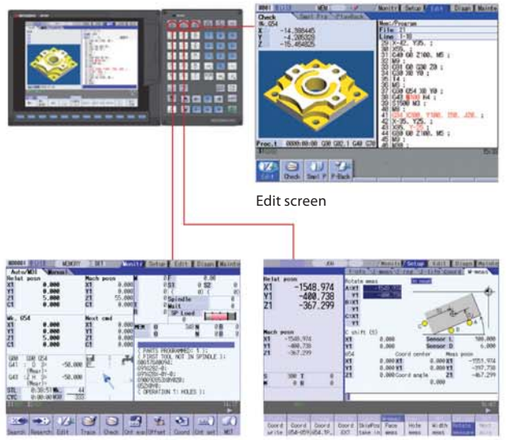
for M700V Series & M70 Series

Human Machine Interface for easier and visible use

HMI for Easier and Visible Use

Screen structure linking to the operation processes

Operation processes are divided into three steps, “Monitor”, “Setup” and “Edit”, and necessary information is aggregated into the three screens. These screens can be displayed by just a single touch of a button on the keyboard.



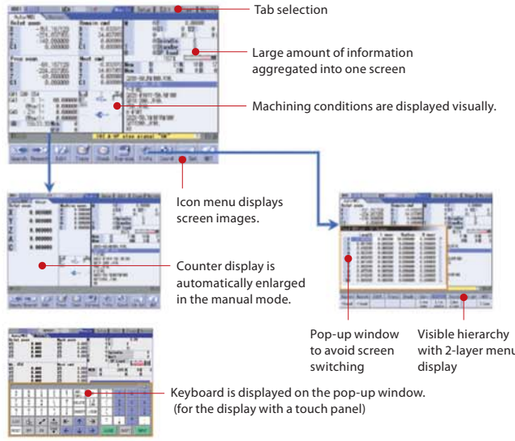
Edit screen

Monitor screen

Setup screen

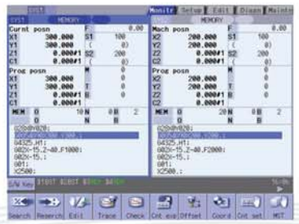
Pop-up screens

Tabs allow the user to select necessary operation from the operation menu, and pop-up screens allow the user to access desired information while the original screen remains displayed. For the display with a touch panel, a keyboard can be displayed on the screen.


Tab selection
Large amount of information aggregated into one screen
Machining conditions are displayed visually.
Icon menu displays screen images.
Counter display is automatically enlarged in the manual mode.
Pop-up window to avoid screen switching
Visible hierarchy with 2-layer menu display
Keyboard is displayed on the pop-up window. (for the display with a touch panel)

2-part system display

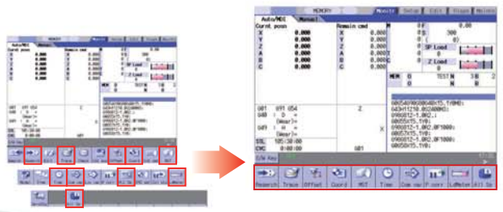
The Monitor screen of the 2nd part system can be displayed together with the 1st part system. Switching screens is not necessary.



2-part system display

Menu customization function

Menu keys bottom of the screen can be freely arranged. Frequently used menu keys can be concentrated in the first page.



Operation Support

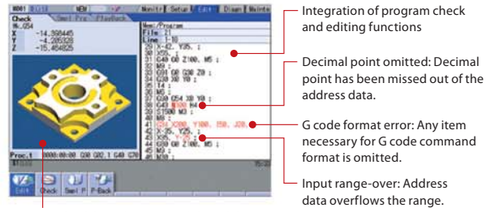
Manual/Automatic backup function

- Batch-backup of the NC data into the memory card inserted in the front interface of the display is possible. For the built-in hard disk type M700VW Series, backup in the hard disk is also possible.
- Data is automatically backed-up at a certain interval set by parameter.

Manual/automatic backup function

Program input error warning function

- The 3D solid model check function is added for further realistic cutting check.
- This function supports an operator to input and check programs. Errors are indicated when omitted decimal point, input range overflow or G code input error is found.


Integration of program check and editing functions
Decimal point omitted: Decimal point has been missed out of the address data.
G code format error: Any item necessary for G code command format is omitted.
Input range-over: Address data overflows the range.

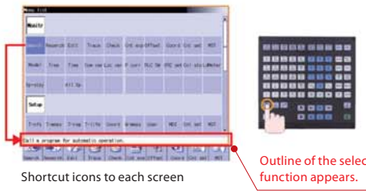
Program check based on a 3D solid model

Guidance function

By pushing the help button, guidance (operation procedure/descriptions of parameter/alarm and G code format) regarding the currently displayed screen will be displayed.

Menu list

Menu list buttons are newly introduced. With these buttons, a screen to be displayed can be called directly. Selected screen’s function outline is also displayed.



Shortcut icons to each screen

Simple Programming Functions with Simple Machining Menu

NAVI MILL (Machining center system) / NAVI LATHE (Lathe system)

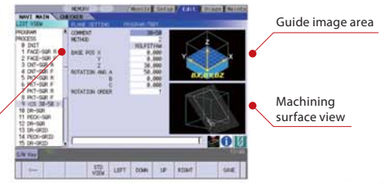
NAVI MILL
NAVI LATHE

Automatically create programs for each process when you just select machining process and input data on screen. If you register tools and cutting conditions in advance, tool path can be graphically drawn for the program check. This function also supports inclined surface machining.

NAVI MILL (Machining center system)

NAVI LATHE (Lathe system)

Set the shape of the inclined surface to machine.



C70 Series

iQ Platform compatible CNC, providing largest effect on TCO reduction

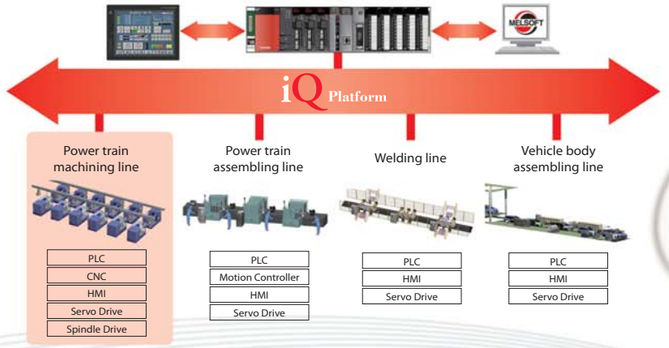
- CNC structured in building block method on iQ Platform.
- Compact and high-speed CNC CPU module <Q173NCCPU> equipped with multiple-axes in multi-part systems.
- Ultra-high-speed connection between ultra-high-speed PLC CPU module <MELSEC QnUD (H) CPU> and CNC CPU.
- Variety of modules for power supply, input/output interface, network and measurement are available.
- <Mitsubishi Graphic Operation Terminal>, easily customizable HIM with high-performance and multiple functions.
- MELSOFT, easy-to-use engineering tools with multiple functions.

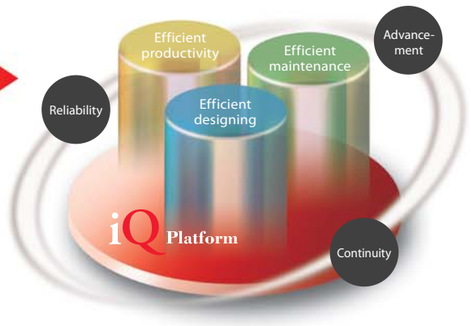
] Customized screen image

Main Specifications

Specifications		C70	
		Machining center system	Lathe system
Number of control axes	Number of basic control axes (NC axes)	3	2
	Maximum number of control axes (NC axes + spindles + PLC axes)	16	16
	Maximum number of NC axes (total for part systems)	16	16
	Maximum number of spindles	7	4
	Maximum number of PLC axes	7	7
	Maximum number of simultaneous contour control axes	4	4
	Maximum number of NC axes per part system	8	8
Number of control part systems	Standard number of part systems	1	1
	Maximum number of part systems	7	3
PLC function	Program capacity [k steps]	Select from among 30/40/60/120/260	
	Maximum number of files to store	124	
	Number of input/output points	4,096	
	Available instruction	354	

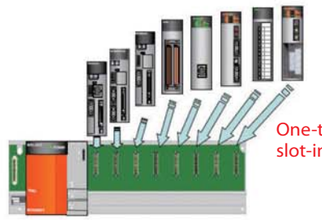
iQ Platform makes it possible to structure optimum controllers for various lines.





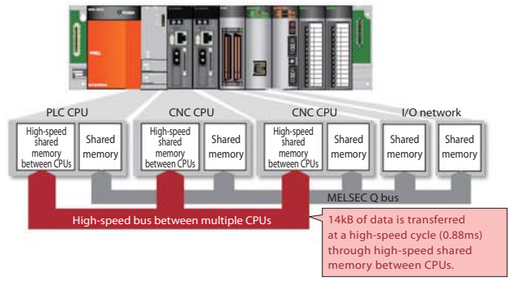
Building Block Type

- Variety of network modules of Mitsubishi PLC MELSEC-Q series are available.
- Motion controllers and robots are compatible with iQ platform, enabling system expansion.



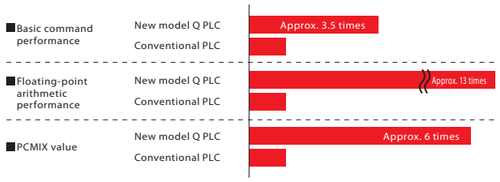
High-speed Bus Between Multiple CPUs

For data transfer between CNC CPU and PLC CPU, we have newly developed high-speed bus between multiple CPUs.


PLC CPU
CNC CPU
CNC CPU
I/O network
High-speed shared memory between CPUs
Shared memory
MELSEC Q bus
High-speed bus between multiple CPUs
14kB of data is transferred at a high-speed cycle (0.88ms) through high-speed shared memory between CPUs.

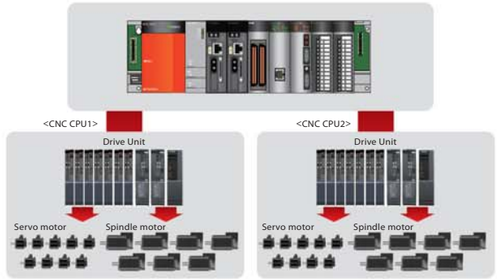
New Model Q PLC

Sequence processing time is widely accelerated, including 3.5 times faster basic instruction performance compared to the conventional one. Reduced scan time reduces the tact time.



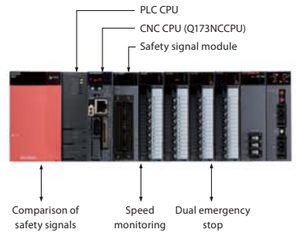
Multi-axis, Multi-part System Control

CNC CPU module can control up to 16 NC axes and spindles and up to 7 part systems. iQ Platform can be equipped with up to 2 CNC CPU modules.



Safety Observation Function

This function supports safety signal comparison, speed observation and emergency stop duplexing. This function complies with the requirement of European Safety Standards 954-1 Safety Category 3.



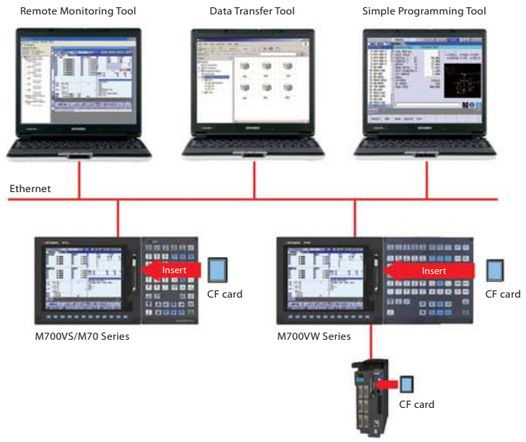
GOT 1000 Series Displays

- Original screens can be easily developed with GOT screen creation tool (GT Designer 2). Machine operation is enabled with a touch-panel display instead of a conventional machine operation panel.
- NC Monitor is installed in SVGA and XGA models as standard, which enables setting each NC data and editing machining programs, etc.

] Customized screen image

User Support Tool

Network Support Tools for improving CNC environment



Ethernet Communication Function (Supported by: M700V, M70, C70)

10/100Mbps Ethernet communication function is equipped as standard, enabling large-capacity program input/output and interaction/operation of high-speed program server.

Data Server Operation (Supported by: M700V, M70)

- Machining programs in the CF card (inserted in the display) or hard disk (in the case of M700VW Series) can be directly searched and run. Direct edit is also available.
- Sub-program call is available from machining programs in the memory card/hard disk.
- There is no limitation in program format.

M700V/M70 Series

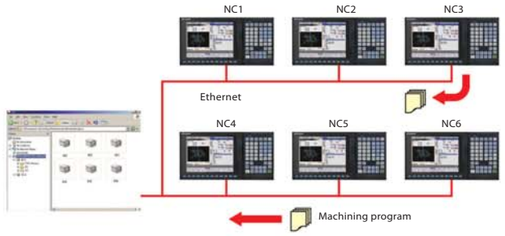
M700VW Series is equipped with a PCMCIA II slot.
CF card can be also used with an adapter.

In the case of M700VW Series,
CF card can be loaded
in the control unit.

NC Explorer (Supported by: M700V, M70)

Data Transfer Tool

By connecting the NC and host personal computer via Ethernet, NC data such as machining programs, variables, parameters, etc. can be transferred mutually.



NC Monitor (Supported by: M700V, M70, C70)

Remote Monitoring Tool

An identical screen with NC display can be displayed on a personal computer. By connecting a personal computer to NC unit when necessary, various data can be checked and set on the same HMI (Human Machine Interface) as the standard NC screen.

Remote Monitoring Tool

NAVI MILL on PC/NAVI LATHE on PC (Supported by: M700V, M70)

PC Version of Simple Programming Functions

Simple programming functions, “NAVI MILL” and “NAVI LATHE” can be operated on a personal computer.

Development Tool

Fulfilling Development Tools Support Individualization of CNC.

NC Designer (Supported by: M700V, M70)

Screen Design Tool

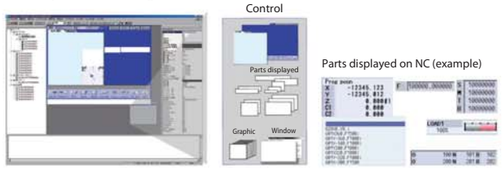
- By laying out ready-made standard parts, you can easily create original screens without programs.
- When using touch panel display, a machine operation panel can be built on NC display.
- Events of the standard parts can be described in the macro language.
- Using the C language source generation function of NC Designer, customized functions can be added by programming in C language. (Dedicated development environment necessary)

NC Designer

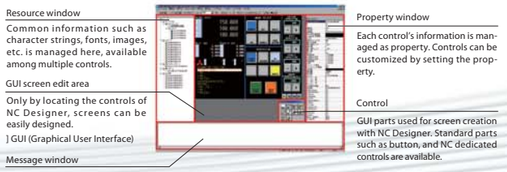
M700V/M70 Series

- Only by locating parts of various functions on the screen, original screens can be designed easily.
- Created screens’ performance can be easily checked on a personal computer.

Develop screen configuration



Element	Outline
Screen	Physical display area
Panel	Base screen
Window	Pop-up window
Figure	7 types of figures such as rectangle and circle
Control	Standard graphic parts such as buttons and lamps, and NC display parts such as counters and programs


Resource window
Common information such as character strings, fonts, images, etc. is managed here, available among multiple controls.
GUI screen edit area
Only by locating the controls of NC Designer, screens can be easily designed.
] GUI (Graphical User Interface)
Message window
Property window
Each control's information is managed as property. Controls can be customized by setting the property.
Control
GUI parts used for screen creation with NC Designer. Standard parts such as button, and NC dedicated controls are available.

MS Configurator (Supported by: M700V, M70, C70)

Servo Adjustment Support Tool

Servo parameters can be automatically adjusted by activating the motor with machining programs for adjustment or vibration signals, and measuring/analyzing the machine characteristics.

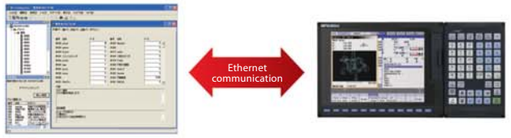
<Main functions>
Bode diagram measurement display, speed loop gain adjustment, position loop gain adjustment, notch filter setting, acceleration/deceleration time constant adjustment, circularity adjustment and servo waveform measurement

MS Configurator

NC Configurator (Supported by: M700V, M70, C70)

Parameter Setup Support Tool

NC data file necessary for NC control and machine operation (such as parameters, tool data, common variables) can be edited on a personal computer. The edited data can be transferred to the NC via Ethernet.

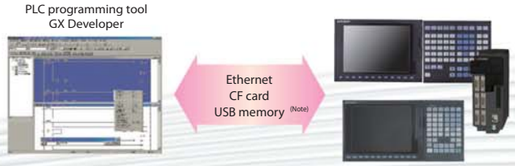


NC Configurator

GX Developer (Supported by: M700V, M70, C70)

PLC Programming Tool

The MELSEC programming tool, offering a wide array of functions and easy use, allows for convenient program design and debugging. Linking with a simulator or other utility allows for the efficient creation of desired programs.



(Note) USB memory is available with M700VW Series only.

Global Service Network

Overseas Service Network

AMERICA

n MITSUBISHI ELECTRIC AUTOMATION INC. (AMERICA FA CENTER)
l Central Region Service Center
500 CORPORATE WOODS PARKWAY, VERNON HILLS, IL., 60061, U.S.A.
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l Western Michigan Service Satellite
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l Western Region Service Center
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l North CA Service Satellite
PORTLAND, OREGON, 97086, U.S.A.
TEL: +1-714-220-4796 / FAX: +1-714-229-3818
l Eastern Region Service Center
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l Western Pennsylvania Service Satellite
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l Southern Texas Service Satellite
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l Central Florida Service Satellite
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l Canadian Region Service Center
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EDO. DE MEXICO
TEL: +52-55-9171-7662 / FAX: +52-55-9171-7649
l Monterrey Service Satellite
ARGENTINA 3900, FRACC. LAS TORRES, MONTERREY, N.L., 64720, MEXICO
TEL: +52-81-8365-4171 / FAX: +52-81-8365-4171
l Brazilian Service Center
ACESSO JOSE SARTORELLI, KM 2.1 CEP 18550-000, BOITUVA-SP, BRAZIL
TEL: +55-15-3363-9900 / FAX: +55-15-3363-9911
l Brazilian's Sites Service Center
CITIES OF PORTO ALEGRE AND CAXIAS DO SUL BRAZIL
CITIES OF SANTA CATARINA AND PARANA STATES
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